



# Document Front Sheet

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**Nalcor Energy Lower Churchill  
Project, Environmental Effects  
Monitoring Program –  
Avifauna**

2015 Forest Songbird and  
Common Nighthawk (*Chordeiles  
minor*) Point Count Surveys



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**Annual Report**

December 2, 2015

**NALCOR ENERGY LOWER CHURCHILL PROJECT, ENVIRONMENTAL EFFECTS MONITORING PROGRAM – AVIFAUNA**

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## NALCOR ENERGY LOWER CHURCHILL PROJECT, ENVIRONMENTAL EFFECTS MONITORING PROGRAM – AVIFAUNA

### EXECUTIVE SUMMARY

The 2015 Avifauna Environmental Effects Monitoring Program (EEMP) is one component of Nalcor Energy's (Nalcor) larger, multi-year program designed to monitor potential environmental effects on wildlife during the development on the Lower Churchill Generation Project (the Project). The 2015 annual report is a descriptive summary of the methods and results of field surveys conducted spring/early summer during the second year of the Avifauna EEMP.

Stassinu Stantec Limited Partnership (Stassinu Stantec) completed forest songbird and Common Nighthawk (*Chordeiles minor*) point count surveys in 2015. The forest songbird point count surveys were designed to assess distribution and habitat associations based on species richness and additional information on provincially listed species at risk (SAR) in the Study Area. The Common Nighthawk point count surveys were designed to collect additional information on their distribution and habitat associations in the Study Area.

A total of 48 species were identified. The highest species richness was observed in hardwood (n=7), disturbed (n=6), and white spruce (n=6) habitats. Black spruce lichen woodland (n=5), mixedwood (n=5), black spruce (n=4) and bog (n=4) had lower species richness. None of the targeted provincially listed SAR species were recorded during the forest songbird point count surveys, but a federally listed threatened species, Bank Swallow (*Riparia riparia*), was documented. Three Common Nighthawks were recorded in breeding and foraging habitats.

The 2015 Avifauna EEMP program field survey results provide preliminary information on the avifauna, SAR, and Common Nighthawk distribution and habitat associations in the Study Area. Stassinu Stantec will use this information in combination with results of past and future surveys to monitor any potential Project effects on avifauna from Project activities in the Project Area.



## NALCOR ENERGY LOWER CHURCHILL PROJECT, ENVIRONMENTAL EFFECTS MONITORING PROGRAM – AVIFAUNA

2015 AVIFAUNA EEMP  
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### 1.0 2015 AVIFAUNA EEMP

The 2015 Avifauna Environmental Effects Monitoring Program (EEMP) was completed by Stassinu Stantec Limited Partnership (Stassinu Stantec) and is part of the broader EEMP that Nalcor Energy (Nalcor) is completing in conjunction with the Lower Churchill Generation Project (the Project). The work is based on the requirements and commitments in the Lower Churchill Generation Project Environmental Impact Statement (EIS) (Nalcor 2009a, 2009b).

The two objectives of the 2015 Avifauna EEMP were to:

1. Assess the effect of Project-related activities on the distribution and habitat associations of avifauna using species richness as an index of change over time
2. Collect additional information on the distribution and habitat associations of select avifauna Species At Risk (SAR) in the lower Churchill River Valley, based on commitments made in the EIS regarding Olive-sided Flycatcher (*Contopus cooperi*), Rusty Blackbird (*Euphagus carolinus*), Gray-cheeked Thrush (*Catharus minimus*), and Common Nighthawk (*Chordeiles minor*).

The 2015 annual report is a descriptive summary of the methods and results of field surveys conducted spring/early summer during the second year of the Avifauna EEMP.

#### 1.1 Background

In 2006 and 2007, a series of three baseline studies were carried out in support of the Project including: (1) forest songbird (point count) surveys (Minaskuat Inc. 2008), (2) waterfowl breeding pair, brood, and spring staging surveys (LGL Limited 2008), and (3) an ice dynamics study of the lower Churchill River valley (Hatch 2007). These surveys identified a variety of songbird, waterfowl and raptor species, including five species listed under the federal *Species at Risk Act* and/or the Newfoundland and Labrador *Endangered Species Act*: Harlequin Duck (*Histrionicus histrionicus*), Common Nighthawk, Olive-sided Flycatcher, Gray-cheeked Thrush, and Rusty Blackbird. Ice dynamics modeling indicated that *ashkui* (areas of open water), which waterfowl use as staging areas in certain areas, will likely move as a result of the Project but will continue to exist. Monitoring and follow-up programs identified in the Project EIS (Nalcor 2009a, 2009b) and recommended by the Joint Review Panel (JRP 2011) included:

1. Monitoring of *ashkui* formation in the Project area
2. Monitoring of direct and indirect impacts on waterfowl
3. Development a detailed mitigation and monitoring plan for all listed species (e.g., point count surveys).

Ice conditions/*ashkui* formation and waterfowl [Surf Scoter (*Melanitta perspicillata*)] use of *ashkui* in the lower Churchill River valley were monitored during the first year of the Avifauna EEMP



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(2014). Additionally, the first point count surveys of the three year monitoring program were carried out to collect distribution and habitat associations of forest songbirds and targeted SAR.

### 1.2 Study Team

The study team for the 2015 the Avifauna EEMP was comprised of personnel from Stassinu Stantec (Table 1.1).

**Table 1.1 2015 Avifauna Study Team**

Name	Role	Survey
Wayne Tucker	Project Manager	Forest Songbirds Common Nighthawk
Barry Keough	Assistant Project Manager	Forest Songbirds Common Nighthawk
Victoria Greeley	Project Controls	Forest Songbirds Common Nighthawk
Caroline Hong	HSEQ Coordinator	Forest Songbirds Common Nighthawk
Karen Rashleigh	Team Lead Reporting	Forest Songbirds
Todd Watts	Team Lead	Forest Songbirds
Stacey Camus	Team Lead Reporting	Common Nighthawk
Tony Parr	Team Lead	Common Nighthawk
Daniel Windeler	Field Technician Team Lead	Common Nighthawk
Margie Clark	Field Technician	Forest Songbirds Common Nighthawk
Jean-Luc Hervieux	Field Technician	Forest Songbirds
Chris White	Field Technician	Common Nighthawk

Prior to the start of the field component of the 2015 Avifauna EEMP, all personnel reviewed the Health, Safety, Environment and Quality (HSEQ) and Project Execution Plan, and the Risk Management Strategy (RMS 1) (Stassinu Stantec 2015). A daily hazard assessment (RMS 2) was completed each morning. The required scientific research permit #IW2015-03 (Appendix A) was acquired from the Government of Newfoundland and Labrador, Department of Environment and Conservation prior to the surveys.

## NALCOR ENERGY LOWER CHURCHILL PROJECT, ENVIRONMENTAL EFFECTS MONITORING PROGRAM – AVIFAUNA

### METHODS

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## 2.0 METHODS

### 2.1 Study Area

The Avifauna EEMP Study Area encompassed a variety of habitats representative of the Project Study Area within and adjacent to the Project Development Area. Forest songbird point count surveys were carried out in the area between Gull Island, Happy Valley-Goose Bay, and Goose River (Figure 2-1). Point count locations were the same as those used in 2014 (5 days), and additional point count locations were established along the Goose River (1 day), which was previously surveyed during baseline surveys in 2006 as a control.

Common Nighthawk point count surveys were carried out towards the west of the Study Area between Happy Valley-Goose Bay and Gull Island, as well as south from Blackrock Bridge on the Churchill River to the Traverspine River within the Project Development Area (Figure 2-1). Surveys targeted Common Nighthawk breeding and foraging habitats (Table 2.1) based on representative habitat availability in the Study Area. Point count locations included areas previously surveyed in 2014 towards the West with additional point count stations towards the South within the Study Area.

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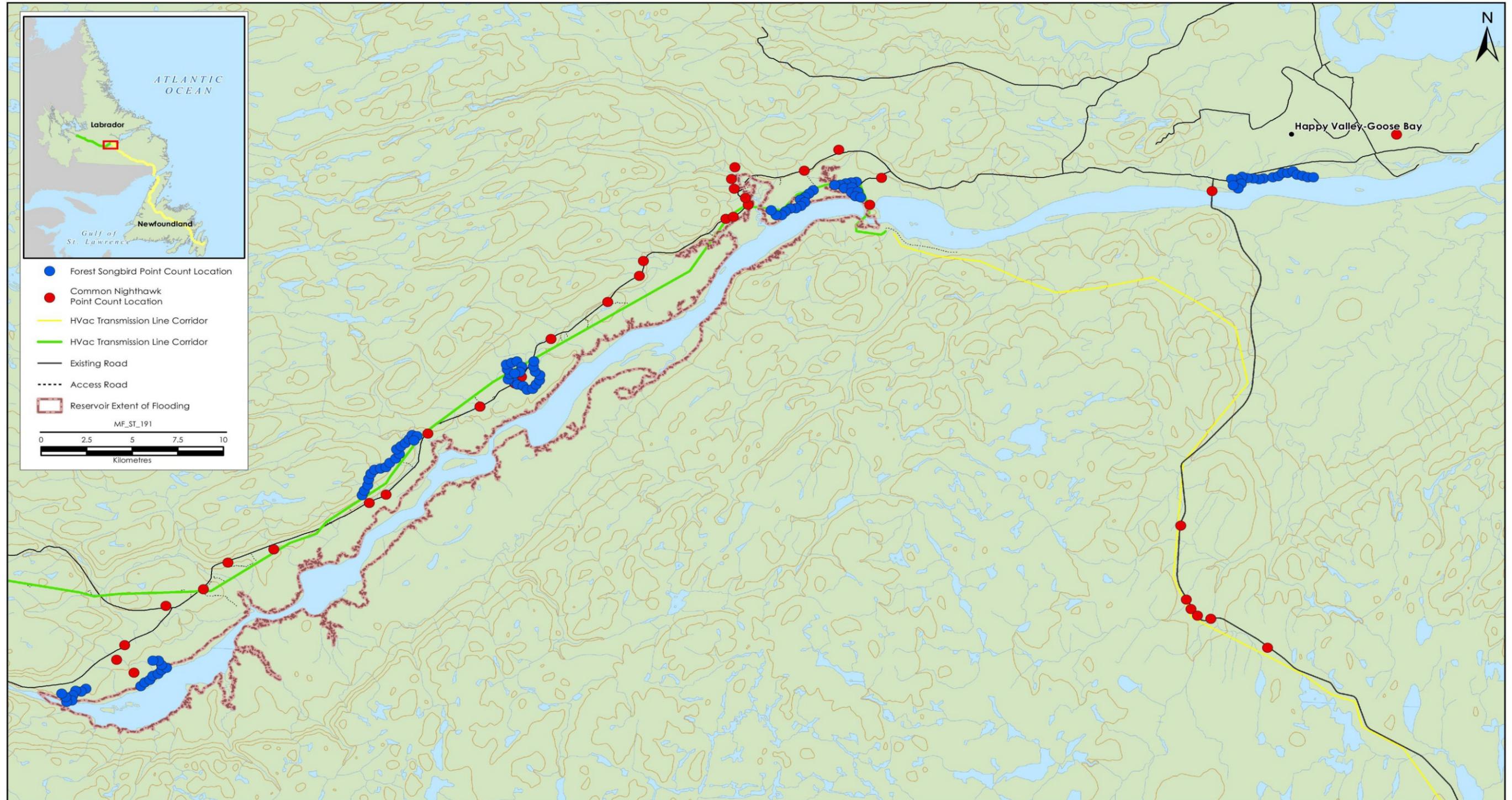


Figure 2-1 2015 Avifauna EEMP Study Area



## NALCOR ENERGY LOWER CHURCHILL PROJECT, ENVIRONMENTAL EFFECTS MONITORING PROGRAM – AVIFAUNA

### METHODS

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## 2.2 Forest Songbird Point Count Surveys

Two 2-person field teams conducted the point count surveys. Starting locations for all point count transects were accessed by vehicle (one transect per team per day).

Survey protocols were designed to follow the Newfoundland and Labrador Boreal Bird Monitoring Protocol Initiative SOP#3 (NLDOEC 2012). The surveys began no earlier than 30 minutes before sunrise and ended by 0930. Surveys were conducted only under suitable weather conditions including temperatures above freezing, winds less than 25 km/h, no precipitation (or intermittent light precipitation), and visibility of more than 50 m.

Point count stations were spaced at 300 m intervals along each transect. At each point count station, the following information was recorded on prepared datasheets: date, GPS location, weather conditions, habitat information, and survey start and end times.

The surveys consisted of a five-minute listening period followed by call playback. All birds heard or observed within the five minute period were recorded. Each bird observation was recorded based on distance categories of 0-25, 25-50 m, 50-100 m, and 100-400 m. After the five-minute listening period, a Black-capped Chickadee (*Poecile atricapillus*) mobbing call was broadcasted for two minutes using a FoxPro game caller. Any new species were recorded in a one-minute listening period after the broadcast<sup>1</sup>. Any birds (or other wildlife species) heard or observed during transit between point count stations were recorded as incidental observations.

### 2.2.1 Analysis

Species richness was determined by the total of number of species observed during forest songbird point count surveys. For this analysis, species richness was calculated for each point count station and averaged by habitat type. Habitat types that had three or more point count stations were included in the analysis (black spruce, black spruce lichen woodland, bog, disturbed, hardwood, mixedwood, and white spruce) (Stantec Consulting Ltd. 2013). Habitat types omitted were balsam fir (two point counts), regenerating (one point count), and riparian (two point counts) due to low sample size. Only species targeted by point count surveys (passerines and woodpeckers) were included when determining species richness (Stantec Consulting Ltd. 2013). Other species were omitted based on the following restrictions (Stantec Consulting Ltd. 2013):

- Waterfowl and waterbirds - their primary habitats are not forests
- Raptors – their territories exceed area surveyed by point counts
- Early nesters as described by Environment Canada (Government of Canada 2014) as they may not be breeding during the timing of point counts – Gray Jay (*Perisoreus canadensis*),

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<sup>1</sup> On June 20, a Boreal Owl (*Aegolius funereus*) mobbing call was used as there were technical issues with the Black-capped Chickadee call in the FoxPro.



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American Crow (*Corvus brachyrhynchos*), Common Raven (*Corvus corax*), Red Crossbill (*Loxia curvirostra*), and White-winged Crossbill (*Loxia leucoptera*).

- Colonial species (all Swallows, except Tree Swallow) – can result in error when extrapolated to larger study area

**2.2.2 Species at Risk**

Olive-sided Flycatcher, Rusty Blackbird, Common Nighthawk, and Gray-cheeked Thrush were selected as targeted SAR species for the avifauna EEMP based on the EIS (Nalcor 2009a, 2009b). When suitable habitat for the four targeted SAR species was encountered (Table 2.1), call playback of the species was also played for two-minute call playback period (following the chickadee playback-listening period), followed by a one-minute listening period.

**Table 2.1 Species at Risk and Their Habitats in the Study Area**

Scientific Name	Common Name	Status	Habitat	Occurrence in the Study Area
<i>Contopus cooperi</i>	Olive-sided Flycatcher	Threatened under SARA and NLESA	Open areas (e.g., forest clearings, wetlands, burns) containing mature trees and large numbers of dead trees.	Four observations during baseline surveys in 2006 and 2007, and one during 2014 point count surveys. Suitable primary habitat estimated to comprise 14% of the lower Churchill River watershed (LCRW).
<i>Euphagus carolinus</i>	Rusty Blackbird	Special Concern under SARA Vulnerable NLESA	Primarily occupies forest wetlands, such as slow-moving streams, peat bogs, sedge meadows, marshes, swamps, beaver ponds and pasture edges.	16 observations during baseline surveys in 2006 and 2007, and seven during area nest searches in 2014. Suitable primary habitat estimated to comprise 3.7% of the LCRW.
<i>Chordeiles minor</i>	Common Nighthawk	Threatened under SARA and NLESA	Burns and burn edges, or anthropogenically disturbed sites for ground nesting; wetland areas for foraging on insects.	Incidental observations during baseline surveys in 2006 (number unconfirmed) and one during area nest searches in 2014. Suitable primary habitat estimated to comprise 42.3% of the LCRW.
<i>Catharus minimus</i>	Gray-cheeked Thrush	Threatened under NLESA	A variety of mature forest types including white spruce, wet spruce and dry spruce adjacent to wetland or riparian habitat.	Nine observations during baseline surveys in 2006 and 2007. Suitable primary habitat estimated to comprise 16.9% of the LCRW.

Notes:

- LCRW – Lower Churchill River Watershed; SARA – Species at Risk Act, NLESA – Newfoundland and Labrador Endangered Species Act.
- Estimate of primary habitat is based on the regional Ecological Land Classification (ELC) conducted in support of the Project.



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### 2.3 Common Nighthawk Point Count Surveys

The surveys followed Stantec's Standard Operating Protocols (SOPs) for Common Nighthawk as well as other species of the Nightjar family (Stantec Consulting Ltd. 2010) based upon recommendations from British Columbia's Resource Inventory Committee (BC RIC 1998) and United States Nightjar Survey Network (US NSN 2012).

Surveys were conducted during mid-to late June, when males call are more likely to call (BC RIC 1998). Surveys began at sunset and continued until the end of the dusk crepuscular period, or nautical twilight. Nautical twilight period was identified using a sunrise/sunset calculator from the National Research Council of Canada (Government of Canada 2015). Surveys were conducted under favourable weather conditions with temperature above 7°C, winds below 3 on the Beaufort scale (explained in Table 3.1), and either no precipitation to light, intermittent drizzle.

Surveys were carried out by two-person field teams. The field team surveyed point count stations spaced a minimum of 500 m apart (BC RIC 1998) in Common Nighthawk habitat in the Study Area as described above in Section 2.1.

Upon arrival at a survey location, all light and noise sources were turned off, and observers waited one-minute to allow potential effects from such disturbances to subside. During this time, UTM coordinates, weather, moon visibility, noise, and habitat data were recorded. Moon phase was determined before heading into the field using the following website: <http://www.timeanddate.com/moon/phases/canada/happy-valley-goose-bay>. Any species detected during this period were recorded as incidental observations. The one-minute period was followed by a six-minute listening period. During the six-minute listening period, all Common Nighthawk observations were recorded. For any Common Nighthawk observations, the number of individuals, visual or auditory observation, sex, habitat, approximate distance, and angle from the observation point was recorded. Other bird or wildlife sign were recorded as incidental observations. The six-minute listening period was followed by a two-minute Common Nighthawk call playback. A final two-minute listening period (ten minutes total) followed the call playback where any Common Nighthawk observations were recorded.



## NALCOR ENERGY LOWER CHURCHILL PROJECT, ENVIRONMENTAL EFFECTS MONITORING PROGRAM – AVIFAUNA

### RESULTS

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## 3.0 RESULTS

### 3.1 Forest Songbirds Point Count Surveys

#### 3.1.1 Forest Songbird Point Count Survey Conditions and Effort

Forest songbird point count surveys were conducted over the six day period from June 20 to June 25 under favourable weather conditions (Table 3.1). A total of 122 point counts were completed over 240 field hours. All but one survey began before the 0930 suggested cut-off. Four point counts ended just after the cut-off, but had started before 0930.

**Table 3.1 2015 Forest Songbird Point Count Survey Conditions and Effort**

Date	General Location	Survey Length		Point Counts	Survey Conditions		Field Effort (Hours per Person per Day)
		Start	End		Temperature (°C)	Wind (Beaufort Scale <sup>1</sup> )	
June 20	Outside Happy Valley-Goose Bay	0445	0943	19	11	0 - 2	40
June 21	~50 km west of Happy Valley-Goose Bay	0523	0931	20	14	0 - 3	40
June 22	Muskrat Falls – Lower Brook	0510	0932	22	12	0 - 2	40
June 23	Edwards Brook	0556	0938	18	18	0 - 1	40
June 24	Gull Island	0549	0939	18	17	0 - 3	40
June 25	Goose River	0441	0842	25	9	0 - 3	40

Notes:  
<sup>1</sup> – Beaufort Scale : 0 = <2 km/h; 1 = 2-5 km/h; 2 = 6-11 km/h; 3 = 12-19 km/h; 4 = 20-29 km/h; 5 = 30-39 km/h; 6 = 40-50 km/h; 7 = 51-61 km/h; 8 = 62-74 km/h; 9 = 75-87 km/h; 10 = 88-101 km/h; 11 = 102-116 km/h; and 12 = 117+ km/h

#### 3.1.2 Forest Songbird Point Count Results

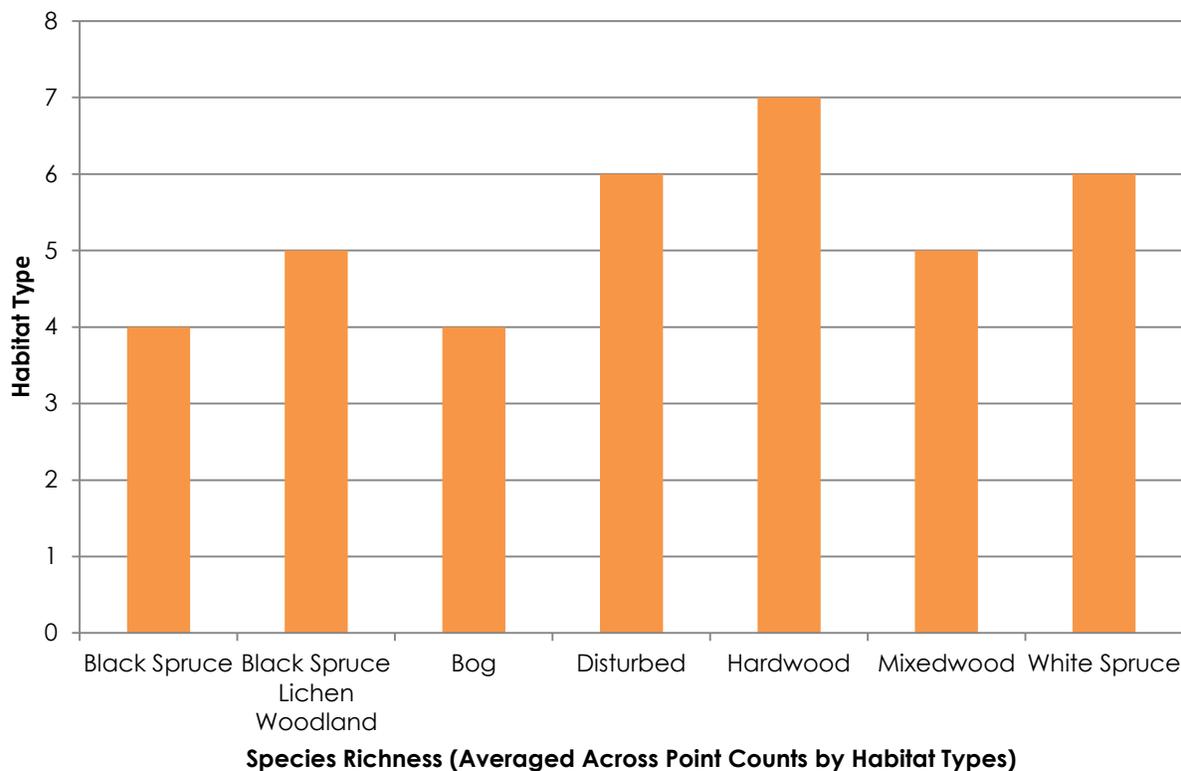
The highest species richness was observed in hardwood (n=7), disturbed (n=6), and white spruce (n=6) habitats (Figure 3-1). The Lower species richness was observed in the following habitats: Black spruce lichen woodland (n=5), mixedwood (n=5), black spruce (n=4) and bog (n=4) had lower species richness.



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**Figure 3-1 Species Richness by Habitat in the Lower Churchill River Valley**

A total of 48 species were identified during point counts (Appendix B). No new species were identified following call playback. Ten of the species detected in 2015 were not detected in 2014, either during point counts or incidentally (Appendix B; Stassinu Stantec 2014): Ruffed Grouse (*Bonasa umbellus*), Common Loon (*Gavia immer*), Greater Yellowlegs (*Tringa melanoleuca*), American Three-toed Woodpecker (*Picoides dorsalis*), Bank Swallow, Winter Wren (*Troglodytes hiemalis*), American Redstart (*Setophaga ruticilla*), White-crowned Sparrow (*Zonotrichia leucophrys*), Savannah Sparrow (*Passerculus sandwichensis*), Pine Grosbeak (*Pinicola enucleator*), and White-winged Crossbill. Similarly, eight species detected in 2014 were not detected in 2015: Spotted Sandpiper (*Actitis macularius*), Wilson’s Snipe (*Gallinago delicata*), Downy Woodpecker (*Picoides pubescens*), Philadelphia Vireo (*Vireo philadelphicus*), Olive-sided Flycatcher, Golden-crowned Kinglet (*Regulus satrapa*), Mourning Warbler (*Geothlypis philadelphia*), and Song Sparrow (*Melospiza melodia*).

The following species were observed as incidental during point count surveys: Red-tailed Hawk (*Buteo jamaicensis*), Ruffed Grouse, Common Loon, American Three-toed Woodpecker, Alder Flycatcher (*Empidonax alnorum*), Gray Jay, Boreal Chickadee (*Poecile hudsonicus*), Hermit Thrush (*Catharus guttatus*), Orange-crowned Warbler (*Oreothlypis celata*), Magnolia Warbler (*Setophaga magnolia*), Yellow-rumped Warbler (*Setophaga coronata*), Northern Waterthrush



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(*Parkesia noveboracensis*), Fox Sparrow (*Passerella iliaca*), White-throated Sparrow (*Zonotrichia albicollis*), Pine Grosbeak, White-winged Crossbill (*Loxia leucoptera*), and unidentified Woodpecker spp. (*Picoides* spp.).

### 3.1.3 Species at Risk

None of the four targeted SAR species were recorded. Bank Swallow (*Riparia riparia*) was observed during forest songbird point count surveys. Bank Swallow is currently listed as Threatened under the federal *Species At Risk Act* (Government of Canada 2002), but has no legal listing under the *Newfoundland and Labrador Endangered Species Act* (Government of Newfoundland and Labrador 2014). The status report prepared for this species indicates that even though populations are declining elsewhere “there is insufficient evidence to establish that the species is presently at risk in Newfoundland and Labrador” and the recommended listing for this species in the province is “Not at Risk” (SSAC 2009).

## 3.2 Common Nighthawk Point Count Surveys

### 3.2.1 Common Nighthawk Point Count Survey Effort and Conditions

Common Nighthawk point count surveys were conducted over four evenings between June 7 and June 21 (Table 3.2). A total of 37 point count surveys were completed over 55 field hours. All point count surveys were completed within the identified nautical twilight period.



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**Table 3.2 2015 Common Nighthawk Point Count Survey Conditions and Effort**

Date	General Location	Survey Duration		Point Counts	Survey Conditions							Field Effort (Hours per Person per Day)
		Start	End		Temperature (°C)	Wind (Beaufort Scale <sup>1</sup> )	Cloud Cover (%)	Precipitation	Noise	Moon (Y/N)	Moon Phase	
June 7	Happy Valley-Goose Bay and Lower Brook	21h00	22h43	8	10	0	95	None	Ambient Traffic River	N	Waning Gibbous	12
June 15	South along the TLH, to Travespine River, Dome Mountain, Muskrat Falls, Lower Brook	20h29	22h34	12	16	2	75	None	Ambient Traffic River	N	Waxing Crescent	20
June 20	Lower Brook and Upper Brook	20h36	22h10	5	13	0-2	55	None	Ambient	Y	Waxing Crescent	8
June 21	Edwards Brook Pinus River	20h59	22h46	12	14	0	25	None	Ambient Traffic River	Y	Waxing Crescent	15

Notes:  
<sup>1</sup> – Beaufort Scale : 0 = <2 km/h; 1 = 2-5 km/h; 2 = 6-11 km/h; 3 = 12-19 km/h; 4 = 20-29 km/h; 5 = 30-39 km/h; 6 = 40-50 km/h; 7 = 51-61 km/h; 8 = 62-74 km/h; 9 = 75-87 km/h; 10 = 88-101 km/h; 11 = 102-116 km/h; and 12 = 117+ km/h



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### 3.2.2 Common Nighthawk Point Count Survey Results

Three Common Nighthawks were recorded during point count surveys (Table 3.3). Two Common Nighthawks were observed near breeding habitat types of gravel and sandy areas. The other Common Nighthawk was observed adjacent a foraging habitat, bog.

**Table 3.3 2015 Common Nighthawk Point Count Survey Results**

Date	Location		Habitat	Number	Type (Auditory/ Visual)	Sex
	Easting	Northing				
June 7	676794	5909399	Sandy area bordered by black spruce and dwarf birch	1	Auditory & Visual	Unknown
June 15	668303	5880058	Bog treed with black spruce and larch	1	Visual	Unknown
June 21	636131	5897564	Gravel pit bordered mixedwood	1	Auditory & Visual	Unknown

The following bird species were observed incidentally during Common Nighthawk surveys: Canada Goose (*Branta canadensis*), Common Merganser (*Mergus merganser*), Spotted Sandpiper (*Actitis macularius*), Greater Yellowlegs (*Tringa melanoleuca*), Wilson's Snipe (*Gallinago delicata*), Herring Gull (*Larus argentatus*), Great Horned Owl (*Bubo virginianus*), Alder Flycatcher (*Empidonax alnorum*), Red-eyed Vireo (*Vireo olivaceus*), Gray Jay, American Crow (*Corvus brachyrhynchos*), Red-breasted Nuthatch (*Sitta canadensis*), Ruby-Crowned Kinglet (*Regulus calendula*), and Swainson's Thrush (*Catharus ustulatus*). Mammal species observed included Moose (*Alces alces*), Snowshoe Hare (*Lepus americanus*), Red Squirrel (*Tamiasciurus hudsonicus*), and Little Brown Myotis (*Myotis lucifugus*). Herpetiles recorded during surveys were American Toad (*Anaxyrus americanus*), Wood Frog (*Lithobates sylvaticus*), and Spring Peeper (*Pseudacris crucifer*).



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## SUMMARY

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**4.0 SUMMARY**

The 2015 Avifauna EEMP program field survey results provide preliminary information on avifauna, SAR, and common nighthawk distribution and habitat associations in the Study Area. This was the second year of a three year program, which will continue in 2016. Stassinu Stantec will use this information in combination with results of past and future surveys to monitor any potential Project effects on avifauna from Project activities in the Project Area.



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### REFERENCES

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## 5.0 REFERENCES

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**NALCOR ENERGY LOWER CHURCHILL PROJECT, ENVIRONMENTAL EFFECTS MONITORING  
PROGRAM – AVIFAUNA**

# **APPENDIX A**

2015 Research Permit





GOVERNMENT OF NEWFOUNDLAND AND LABRADOR  
Dept of Environment & Conservation

## Scientific Research Permit

(as under Section 86 of the Wildlife Regulations, Consolidated Newfoundland and Labrador Regulation 1156/96)

**Permit #: IW2015-03**

**Supplement to Permit(s) #: IW2013-66; IW2014-25**

**Project Title:** *Wildlife Environmental Effects Monitoring Programs for the Lower Churchill Generation Project and Labrador-Island Transmission Link*

**Issued to:**

Wayne Tucker, Team Lead  
Stassinu Stantec Limited Partnership  
19 Union Street  
Corner Brook, NL, A2H 5P9  
Tel: (709) 639-9712

**Permit to:**

- 1) **Winter Research:** Undertake winter aerial and ground track surveys for moose, porcupine and other wildlife;
- 2) **Spring/Summer Research:** Undertake spring/summer breeding bird point count surveys and nest searches;
- 3) **Fall Research:** Undertake fall aerial surveys for beaver colonies

The objectives of these studies are to investigate and monitor potential environmental effects during construction of the Lower Churchill Generation Project and Labrador-Island Transmission Link Project.

**Dates of Research:** March 3 to November 1, 2015.

**Date of Permit Expiration:** December 1, 2015.

**Location:** All field investigations associated with the Lower Churchill Generation Project will occur primarily within the lower Churchill River watershed of Labrador (Figure 1). Of interest is a 20 km radius around the Project footprint in the lower Churchill River valley and the AC transmission line from Muskrat Falls to Churchill Falls. There are also field investigations associated with the Labrador-Island Transmission Link which extends from Happy Valley-Goose Bay in Labrador to the Northern Peninsula of Newfoundland (Figure 2). The intent is to establish a monitoring grid throughout the study area of each Project where cells become permanent monitoring stations. Where possible and appropriate, pre-existing transects and grids will be resurveyed and supplemented.

**Conditions:**

- 1) The permit holder may designate other individuals to perform these actions on his behalf, with suitable supervision. The permit holder is responsible for the training of any designated individuals and must ensure that designated individuals follow all conditions of this permit.
- 2) Names and contact information for all individuals participating in research activities shall be provided to the Wildlife Division-Department of Environment and Conservation, prior to commencement of field work. Additional names or deletion of names can be provided to the Wildlife Division on an ongoing basis.
- 3) Prior to initiation of the field program for effects monitoring and baseline investigations, a digital copy of the shape files of all survey routes must be provided to the Wildlife Division.
- 4) This permit is only valid for work within the indicated study areas (Figures 1 and 2).
- 5) With the exception of activities covered under this permit, no wildlife species, including the study species, will be unduly harassed, injured or killed as a result of activities performed under this permit. The Wildlife Division advises applicants to operate under established regulations and guidelines with respect to wildlife and wildlife habitat to minimize adverse impacts (Section 106 of the Wild Life Regulations under the *Wild Life Act* (O.C. 96-809)).
- 6) Disturbance of all wildlife should be minimized during helicopter and ground transportation. Whenever possible, aircraft should not descend lower than 100 meters (above ground level) during surveys.
- 7) The field program will be conducted using accepted wildlife research techniques and targeted species will be disturbed as little as possible. The method and survey dates described in the initial permit request will be followed as closely as possible. Any changes to the survey design or methodology outlined in the initial permit request will require approval before implementation.
- 8) Any samples that are collected must be turned into the Wildlife Division following identification. A permit is required and must be obtained prior to transporting any samples or specimens out of the province.
- 9) To avoid introduction of non-native species, all research equipment should be new and unused, or equipment that has not been previously used outside of Labrador or the Island of Newfoundland.
- 10) Final reports should be submitted for each of the components of the work proposed and permitted. Reports should provide a synopsis of the location of surveys, methods employed, number of samples/specimens taken, location of samples/specimens,

additional relevant ecological information and a summary of next steps. The raw data and coordinates should be submitted in digital format along with the final reports for each component of the field program and for all sightings of wildlife and sign. The permit holder is responsible to obtain any and all permissions which may be required to release this information to the Wildlife Division. Final reports are to be remitted by the following dates to the Wildlife Division:

*Winter Research:* May 1, 2015

*Spring/Summer Research:* October 1, 2015

*Fall Research:* December 1, 2015

- 11) Any unusual wildlife observations or any adverse effects observed during the field program are to be reported immediately to the Wildlife Division
- 12) This permit does not absolve or relieve the permit holder from any other laws, permits, regulations or orders.
- 13) This permit does not relieve the permit holder from the requirement to acquire permission to access private property.
- 14) All conditions of this permit must be adhered to and data and results from the field program submitted to the Wildlife Division prior to another permit being issued.
- 15) Under the discretion of the Director of Wildlife, this permit can be revoked without notice.

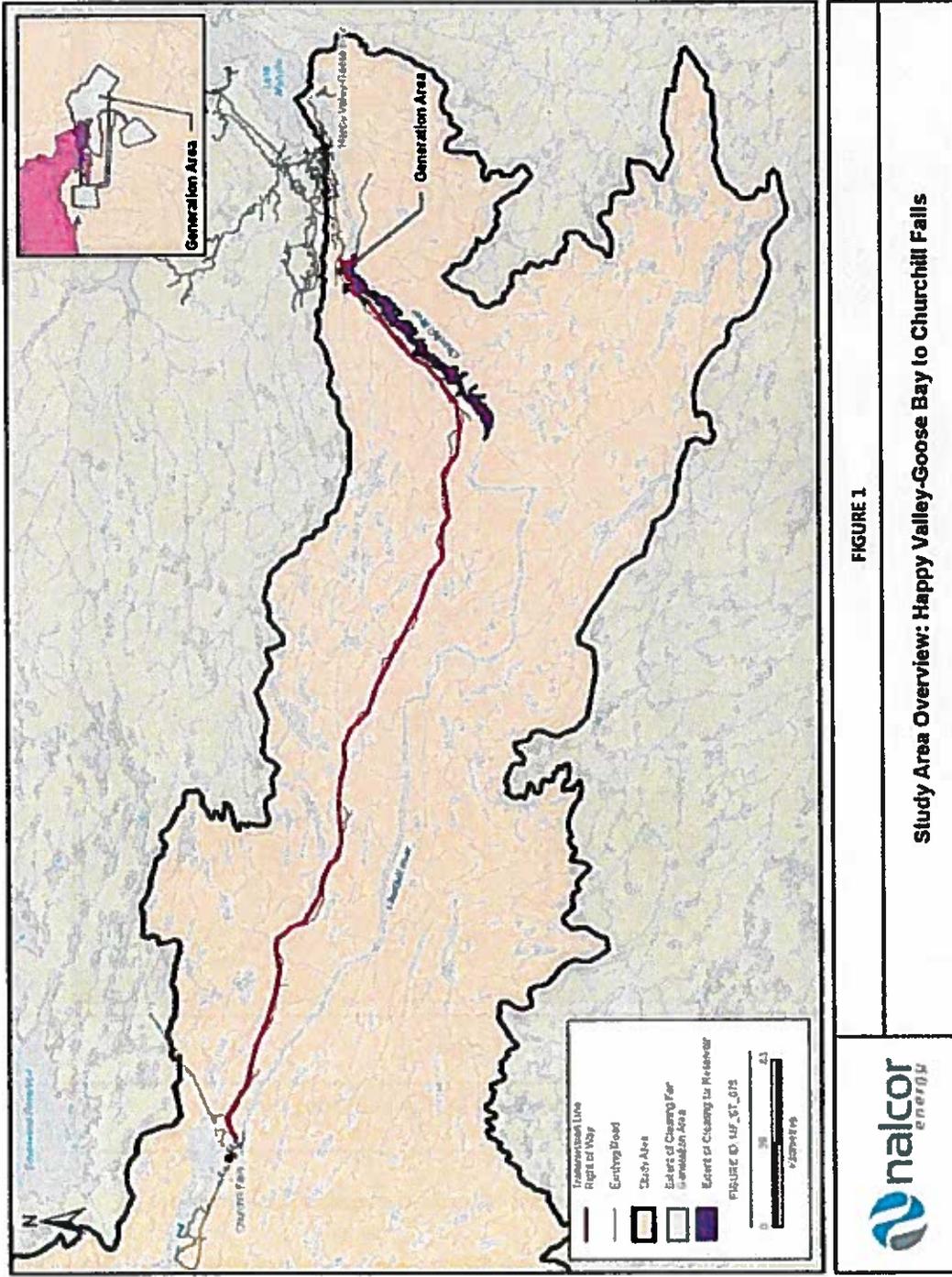
Date:

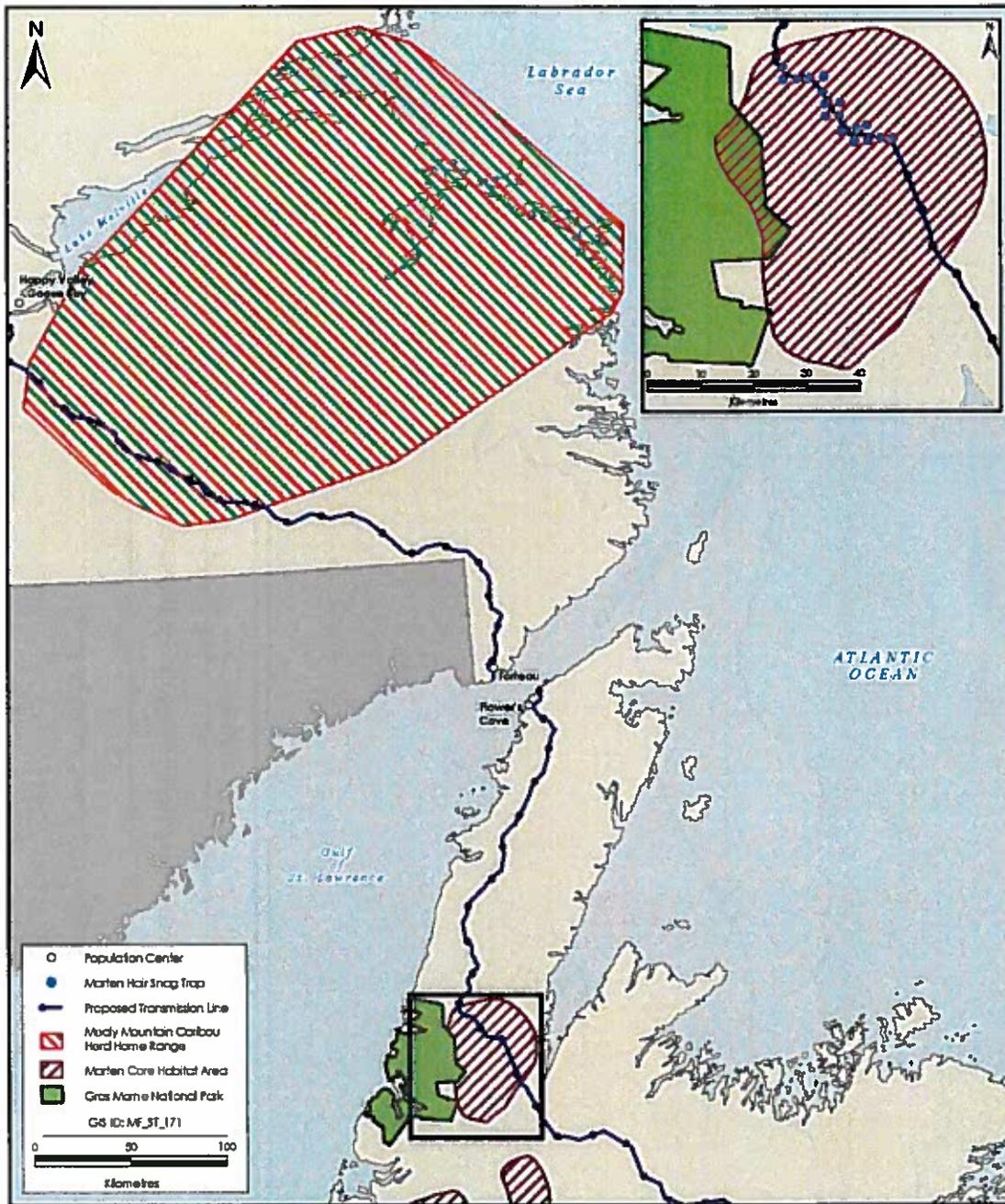
*March 4, 2015*

Director of Wildlife

*92366*

Wildlife Division  
PO Box 2007  
Corner Brook, NL  
A2H 7S1  
Ph (709) 637-2008  
Fax (709) 637-2004





 **Figure 2**  
**Study Area Overview for the Labrador-Island Transmission Link Project**

**Figure 2 Study Area Overview for the Labrador-Island Transmission Link Project**

**NALCOR ENERGY LOWER CHURCHILL PROJECT, ENVIRONMENTAL EFFECTS MONITORING PROGRAM – AVIFAUNA**

# **APPENDIX B**

## Forest Songbird Point Count Survey Data



**NALCOR ENERGY LOWER CHURCHILL PROJECT, ENVIRONMENTAL EFFECTS MONITORING PROGRAM – AVIFAUNA**

**Table B.1 Species recorded during 2015 forest songbird point count surveys**

English Name	Scientific Name	# Forest Songbird Point Count Records	
		2014	2015
Canada Goose	<i>Branta canadensis</i>	14	1
Ruffed Grouse	<i>Bonasa umbellus</i>	-	1
Spruce Grouse	<i>Falcipennis canadensis</i>	1	1
Common Loon	<i>Gavia immer</i>	-	1
Merlin	<i>Falco columbarius</i>	-	1
Spotted Sandpiper	<i>Actitis macularius</i>	2	-
Greater Yellowlegs	<i>Tringa melanoleuca</i>	-	2
Wilson's Snipe	<i>Gallinago delicata</i>	1	-
American Three-toed Woodpecker	<i>Picoides dorsalis</i>	-	4
Black-backed Woodpecker	<i>Picoides arcticus</i>	2	1
Downy Woodpecker	<i>Picoides pubescens</i>	1	-
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	1	1
Least Flycatcher	<i>Empidonax minimus</i>	16	4
Alder Flycatcher	<i>Empidonax alnorum</i>	7	14
Yellow-bellied Flycatcher	<i>Empidonax flaviventris</i>	4	21
Olive-sided Flycatcher	<i>Contopus cooperi</i>	1	-
Red-eyed Vireo	<i>Vireo olivaceus</i>	-	1
Philadelphia Vireo	<i>Vireo philadelphicus</i>	3	-
Gray Jay	<i>Perisoreus canadensis</i>	45	25
American Crow	<i>Corvus brachyrhynchos</i>	3	5
Common Raven	<i>Corvus corax</i>	1	7
Bank Swallow	<i>Riparia riparia</i>	-	15
Boreal Chickadee	<i>Poecile hudsonicus</i>	3	7
Red-breasted Nuthatch	<i>Sitta canadensis</i>	10	5
Winter Wren	<i>Troglodytes hiemalis</i>	-	1
Ruby-crowned Kinglet	<i>Regulus calendula</i>	56	55
Golden-crowned Kinglet	<i>Regulus satrapa</i>	1	-
Swainson's Thrush	<i>Catharus ustulatus</i>	133	127
Hermit Thrush	<i>Catharus guttatus</i>	9	12
American Robin	<i>Turdus migratorius</i>	47	19
Tennessee Warbler	<i>Oreothylpis peregrina</i>	63	82
Orange-crowned Warbler	<i>Oreothylpis celata</i>	3	20
Yellow Warbler	<i>Setophaga petechia</i>	10	9



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English Name	Scientific Name	# Forest Songbird Point Count Records	
Mourning Warbler	<i>Geothlypis philadelphia</i>	1	-
Palm Warbler	<i>Setophaga palmarum</i>	1	3
Magnolia Warbler	<i>Setophaga magnolia</i>	2	9
Yellow-rumped Warbler	<i>Setophaga coronata</i>	66	49
Blackpoll Warbler	<i>Setophaga striata</i>	4	5
American Redstart	<i>Setophaga ruticilla</i>	-	5
Cape May Warbler	<i>Setophaga tigrina</i>	6	7
Black-throated Green Warbler	<i>Setophaga virens</i>	45	37
Wilson's Warbler	<i>Cardellina pusilla</i>	7	3
Northern Waterthrush	<i>Parkesia noveboracensis</i>	26	30
Song Sparrow	<i>Melospiza melodia</i>	1	-
Lincoln's Sparrow	<i>Melospiza lincolni</i>	4	6
White-throated Sparrow	<i>Zonotrichia albicollis</i>	49	41
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	-	2
Savannah Sparrow	<i>Passerculus sandwichensis</i>	-	1
Fox Sparrow	<i>Passerella iliaca</i>	30	40
Dark-eyed Junco	<i>Junco hyemalis</i>	61	79
Pine Grosbeak	<i>Pinicola enucleator</i>	-	2
Purple Finch	<i>Haemorhous purpureus</i>	-	1
White-winged Crossbill	<i>Loxia leucoptera</i>	-	16
Pine Siskin	<i>Spinus pinus</i>	12	2
“-“ indicates no records			

NALCOR ENERGY LOWER CHURCHILL PROJECT, ENVIRONMENTAL EFFECTS MONITORING PROGRAM – AVIFAUNA

**Table B.2 2015 Forest Songbird Point Count Survey Data**

Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 20, 2015	669745	5906196	Mixedwood	0500	Boreal Chickadee (1) Ruby-Crowned Kinglet (1) Swainson's Thrush (1) American Robin (1) White-throated Sparrow (1) Dark-eyed Junco (2)	Gray Jay (1)	Pine Grosbeak (1)
June 20, 2015	669499	5906124	Mixedwood	0516	Swainson's Thrush (1) American Robin (1) White-throated Sparrow (1) Dark-eyed Junco (2) Yellow-bellied Flycatcher (1) Yellow-rumped Warbler (1) Blackpoll Warbler (1) American Redstart (1)	Gray Jay (1)	None
June 20, 2015	669170	5906151	Mixedwood	0530	Swainson's Thrush (1) American Robin (1) White-throated Sparrow (1) Yellow-bellied Flycatcher (1) Tennessee Warbler (2) Northern Waterthrush (2)	Fox Sparrow (1)	None



NALCOR ENERGY LOWER CHURCHILL PROJECT, ENVIRONMENTAL EFFECTS MONITORING PROGRAM – AVIFAUNA

Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 20, 2015	668852	5906149	Mixedwood	0547	Swainson's Thrush (2) White-throated Sparrow (1) Dark-eyed Junco (2) Gray Jay (1) Blackpoll Warbler (1) Tennessee Warbler (2) Northern Waterthrush (2) Magnolia Warbler (1)	Black-throated Green Warbler (1)	None
June 20, 2015	668568	5906202	Black Spruce	0610	Northern Waterthrush (3) Fox Sparrow (1) Black-throated Green Warbler (2) Unidentified Woodpecker (1)	None	None
June 20, 2015	668327	5906023	Mixedwood	0640	Tennessee Warbler (1) Northern Waterthrush (2) Alder Flycatcher (1)	None	White-winged Crossbill (1)
June 20, 2015	667991	5906018	Mixedwood	0750	American Redstart (1) Northern Waterthrush (2) Fox Sparrow (1) Alder Flycatcher (1) American Crow (1)	None	None
June 20, 2015	668533	5905786	Riparian	0820	Tennessee Warbler (2) Northern Waterthrush (1) Least Flycatcher (1) Yellow Warbler (2) Wilson's Warbler (1)	American Redstart (1)	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Eastings		Start Time	Species (Number)		
June 20, 2015	668388	5905496	Mixedwood	0905	Fox Sparrow (1)	None	American Three-toed Woodpecker (1)
June 20, 2015	668115	5905649	Mixedwood	0934	American Redstart (1) Northern Waterthrush (2) Fox Sparrow (1) Black-throated Green Warbler (2) Red-breasted Nuthatch (1)	Tennessee Warbler (1)	None
June 20, 2015	670243	5906305	White Spruce	0445	Ruby-crowned Kinglet (1) Swainson's Thrush (2) American Robin (1) Northern Waterthrush (1) White-throated Sparrow (2) Dark-eyed Junco (1)	None	None
June 20, 2015	670532	5906396	Mixedwood	0508	Ruby-crowned Kinglet (1) Swainson's Thrush (2) Northern Waterthrush (2) White-throated Sparrow (2) Magnolia Warbler (1) Blackpoll Warbler (1) Fox Sparrow (1)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Eastings		Start Time	Species (Number)		
June 20, 2015	670736	5906613	White Spruce	0531	American Robin (3) Northern Waterthrush (3) Blackpoll Warbler (1) Least Flycatcher (1) Gray Jay (1) Tennessee Warbler (1) Yellow Warbler (1) Black-throated Green Warbler (2) Pine Siskin (1)	None	None
June 20, 2015	671033	5906637	White Spruce	0622	Swainson's Thrush (3) American Robin (1) Magnolia Warbler (1) Fox Sparrow (1) Tennessee Warbler (3) Pine Siskin (1)	None	None
June 20, 2015	671300	5906744	White Spruce	0652	Ruby-crowned Kinglet (1) Swainson's Thrush (1) American Robin (1) Northern Waterthrush (1) Fox Sparrow (2) Tennessee Warbler (2) Yellow Warbler (1) Yellow-bellied Flycatcher (1) Yellow-rumped Warbler (1)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 20, 2015	671545	5906576	Mixedwood	0717	American Robin (1) Yellow Warbler (1)	None	None
June 20, 2015	671855	5906530	Mixedwood	0740	Swainson's Thrush (1) Magnolia Warbler (1)	None	None
June 20, 2015	672151	5906474	White Spruce	0759	Ruby-crowned Kinglet (1) American Robin (1) Northern Waterthrush (1)	None	None
June 20, 2015	672454	5906483	White Spruce	0820	Ruby-crowned Kinglet (1) Swainson's Thrush (1) White-throated Sparrow (1) Fox Sparrow (1)	None	None
June 21, 2015	629772	5890757	Bog	0535	Alder Flycatcher (1) Ruby-crowned Kinglet (1) Palm Warbler (2) White-throated Sparrow (1) Dark-eyed Junco (1)	Yellow-rumped Warbler (1)	None
June 21, 2015	629471	5890850	Bog	0600	White-throated Sparrow (1) Dark-eyed Junco (1) Greater Yellowlegs (1) Lincoln's Sparrow (1) Yellow-rumped Warbler (1)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 21, 2015	629525	5891165	Bog	0625	Ruby-crowned Kinglet (1) Dark-eyed Junco (1) Lincoln's Sparrow (1) Fox Sparrow (2) American Robin (1)	None	None
June 21, 2015	629361	5891434	Black Spruce	0648	Ruby-crowned Kinglet (2) Swainson's Thrush (2) White-throated Sparrow (1) Dark-eyed Junco (1) Yellow-rumped Warbler (2)	Boreal Chickadee (1)	None
June 21, 2015	629287	5891722	Black Spruce	0715	Fox Sparrow (1) Yellow-rumped Warbler (1) American Redstart (1) Northern Waterthrush (1)	Swainson's Thrush (1)	Hermit Thrush (1)
June 21, 2015	629571	5891850	Black Spruce	0739	Hermit Thrush (1)	None	None
June 21, 2015	629857	5891964	Bog	0805	Swainson's Thrush (1)	Dark-eyed Junco (1) Lincoln's Sparrow (1) Fox Sparrow (2)	None
June 21, 2015	630146	5891660	Riparian	0832	White-throated Sparrow (1) White-winged Crossbill (1) Tennessee Warbler (1)	None	Fox Sparrow (1)
June 21, 2015	630079	5891347	Black Spruce	0858	Ruby-crowned Kinglet (1) Swainson's Thrush (1) Gray Jay (1)	Dark-eyed Junco (1)	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Eastings		Start Time	Species (Number)		
June 21, 2015	629796	5891234	Bog	0922	Ruby-crowned Kinglet (1) Dark-eyed Junco (1)	American Redstart (1)	Gray Jay (1)
June 21, 2015	630011	5890576	Bog	0523	Alder Flycatcher (4) Yellow-rumped Warbler (1) Fox Sparrow (2) Dark-eyed Junco (1)	None	None
June 21, 2015	630316	5890529	Bog	0546	Fox Sparrow (1)	Boreal Chickadee (2) Palm Warbler (1)	None
June 21, 2015	630553	5890326	Black Spruce	0612	Tennessee Warbler (1)	Gray Jay (2)	None
June 21, 2015	630856	5890413	Black Spruce	0640	Yellow-rumped Warbler (1) Ruby-crowned Kinglet (1) Swainson's Thrush (1) White-winged Crossbill (2)	None	None
June 21, 2015	631023	5890679	Black Spruce	0708	Tennessee Warbler (1) Ruby-crowned Kinglet (1) Swainson's Thrush (1)	None	None
June 21, 2015	631188	5890940	Black Spruce	0732	Swainson's Thrush (1)	None	None
June 21, 2015	631166	5891253	Bog	0758	None	None	None
June 21, 2015	630908	5891437	Bog	0819	Dark-eyed Junco (1)	None	None
June 21, 2015	630783	5891732	Black Spruce	0841	Dark-eyed Junco (1) Tennessee Warbler (1) Ruby-crowned Kinglet (2)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Eastings		Start Time	Species (Number)		
June 21, 2015	630783	5892040	Black Spruce	0907	Alder Flycatcher (1) Fox Sparrow (1) Ruby-crowned Kinglet (1)	None	None
June 22, 2015	645192	5903433	Black Spruce Lichen Woodland	0510	Swainson's Thrush (2) Lincoln's Sparrow (1) Gray Jay (3)	None	None
June 22, 2015	644977	5903201	Black Spruce Lichen Woodland	0525	Swainson's Thrush (2) Dark-eyed Junco (3) Gray Jay (1)	Northern Waterthrush (1)	None
June 22, 2015	644766	5902981	Black Spruce Lichen Woodland	0550	Swainson's Thrush (1) Dark-eyed Junco (2) Common Raven (1) Tennessee Warbler (1)	Ruby-crowned Kinglet (1)	None
June 22, 2015	644521	5902799	White Birch	0616	Swainson's Thrush (2) Dark-eyed Junco (2) Ruffed Grouse (1) Yellow-bellied Flycatcher (1) Ruby-crowned Kinglet (1) Black-throated Green Warbler (1) White-throated Sparrow (1) Yellow-rumped Warbler (1)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 22, 2015	644797	5902682	Mixedwood	0640	Tennessee Warbler (3) Yellow-bellied Flycatcher (1) Black-throated Green Warbler (2) Yellow Warbler (1)	None	None
June 22, 2015	644598	5902445	Black Spruce Lichen Woodland	0710	Swainson's Thrush (1) Dark-eyed Junco (2) Ruby-crowned Kinglet (1) Black-throated Green Warbler (1) Orange-crowned Warbler (1) Yellow-rumped Warbler (1)	Gray Jay (1)	Red-tailed Hawk (1)
June 22, 2015	644333	5902283	Black Spruce Lichen Woodland	0745	Swainson's Thrush (3) Tennessee Warbler (1) Yellow Warbler (3) American Robin (1) Red-eyed Vireo (1) Northern Waterthrush (1) Cape May Warbler (1)	Black-throated Green Warbler (1)	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Eastings		Start Time	Species (Number)		
June 22, 2015	644030	5902240	Black Spruce Lichen Woodland	0810	Dark-eyed Junco (2) Yellow-bellied Flycatcher (1) Ruby-crowned Kinglet (1) Black-throated Green Warbler (1) Orange-crowned Warbler (1) Cape May Warbler (1) Fox Sparrow (1) Hermit Thrush (1) Boreal Chickadee (1)	Gray Jay (1)	None
June 22, 2015	643786	5902052	Black Spruce Lichen Woodland	0825	Dark-eyed Junco (1) Yellow-bellied Flycatcher (1) American Three-toed Woodpecker (1) White-winged Crossbill (1) Hermit Thrush (1)	None	Yellow-rumped Warbler (1)
June 22, 2015	643596	5901804	Black Spruce Lichen Woodland	0845	Dark-eyed Junco (1) Tennessee Warbler (1) Ruby-crowned Kinglet (1) Fox Sparrow (2) Purple Finch (1)	Swainson's Thrush (1) White-throated Sparrow (1) American Robin (1) Hermit Thrush (1)	None
June 22, 2015	643289	5901775	Black Spruce	0900	Dark-eyed Junco (2) Ruby-crowned Kinglet (1) Fox Sparrow (1) Hermit Thrush (1) Greater Yellowlegs (1)	Yellow-rumped Warbler (1) Boreal Chickadee (1)	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Eastings		Start Time	Species (Number)		
June 22, 2015	642991	5902050	Black Spruce	0923	Dark-eyed Junco (1) Gray Jay (1) Yellow-bellied Flycatcher (1) Ruby-crowned Kinglet (1) Hermit Thrush (2)	None	None
June 22, 2015	647515	5904114	Black Spruce	0515	Swainson's Thrush (1) Dark-eyed Junco (1)	None	None
June 22, 2015	647219	5904059	Black Spruce	0533	Spruce Grouse (1) Gray Jay (2) Merlin (1)	None	None
June 22, 2015	646929	5903975	Black Spruce	0555	Ruby-crowned Kinglet (1) Hermit Thrush (1) Lincoln's Sparrow (1) Yellow-rumped Warbler (1)	None	None
June 22, 2015	646636	5903883	Black Spruce	0613	Swainson's Thrush (2) Dark-eyed Junco (1) Ruby-crowned Kinglet (1)	None	None
June 22, 2015	646342	5903823	Black Spruce	0633	Swainson's Thrush (3) Boreal Chickadee (1) Tennessee Warbler (1) Cape May Warbler (1)	Yellow-rumped Warbler (1)	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 22, 2015	646883	5903697	Black Spruce	0702	Swainson's Thrush (2) Dark-eyed Junco (1) Tennessee Warbler (2) Cape May Warbler (1) Yellow-rumped Warbler (1)	None	None
June 22, 2015	647292	5903776	Black Spruce	0729	Swainson's Thrush (1) Dark-eyed Junco (1) Hermit Thrush (1) Tennessee Warbler (1) Cape May Warbler (1) Yellow-rumped Warbler (2)	None	None
June 22, 2015	647302	5903476	Black Spruce	0748	Swainson's Thrush (2) Dark-eyed Junco (1) Boreal Chickadee (2) Tennessee Warbler (2) Cape May Warbler (1) Yellow-rumped Warbler (1) White-winged Crossbill (3) Magnolia Warbler (1)	None	None
June 22, 2015	647637	5903555	Black Spruce	0806	Swainson's Thrush (2) Dark-eyed Junco (1) Yellow-rumped Warbler (1)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 22, 2015	647533	5903277	Disturbed (Cleared area with Black Spruce Edge)	0826	Swainson's Thrush (1) Dark-eyed Junco (1) Gray Jay (1) Ruby-crowned Kinglet (1) Yellow-rumped Warbler (1) Bank Swallow (10) Least Flycatcher (1) White-throated Sparrow (1) Fox Sparrow (1) Black-throated Green Warbler (1)	None	None
June 23, 2015	622069	5883343	Hardwood	0613	Yellow-bellied Flycatcher (1) Alder Flycatcher (2) Swainson's Thrush (1) Yellow-rumped Warbler (1) Northern Waterthrush (1) White-throated Sparrow (1) Dark-eyed Junco (1)	Boreal Chickadee (1)	None
June 23, 2015	622161	5883614	Hardwood	0640	Swainson's Thrush (2) Yellow-rumped Warbler (1) White-throated Sparrow (1) Dark-eyed Junco (2) Red-breasted Nuthatch (1) Tennessee Warbler (2) Black-throated Green Warbler (3) Yellow-bellied Sapsucker (1)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 23, 2015	622317	5883968	Mixedwood	0705	Yellow-bellied Flycatcher (2) Swainson's Thrush (3) Tennessee Warbler (2) Black-throated Green Warbler (2) Least Flycatcher (1)	American Redstart (1)	None
June 23, 2015	622340	5884323	Hardwood	0730	Yellow-bellied Flycatcher (1) Swainson's Thrush (2) Tennessee Warbler (2) Black-throated Green Warbler (2) Orange-crowned Warbler (1) Fox Sparrow (1)	None	Unidentified Woodpecker Spp.
June 23, 2015	622442	5884651	Black Spruce	0754	Swainson's Thrush (3) Black-throated Green Warbler (2)	None	None
June 23, 2015	622621	5884900	Mixedwood	0815	Yellow-bellied Flycatcher (1) Swainson's Thrush (1) Tennessee Warbler (2) Black-throated Green Warbler (2) Orange-crowned Warbler (1)	None	Fox Sparrow
June 23, 2015	622931	5885001	Mixedwood	0836	Yellow-bellied Flycatcher (1) Yellow-rumped Warbler (1) Dark-eyed Junco (1) Black-throated Green Warbler (4)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 23, 2015	623233	5885118	Mixedwood	0855	Swainson's Thrush (3) Dark-eyed Junco (1) Black-throated Green Warbler (2)	None	Fox Sparrow
June 23, 2015	623419	5885371	Black Spruce	0911	Swainson's Thrush (2) Black-throated Green Warbler (1)	None	None
June 23, 2015	623726	5885658	Mixedwood	0929	Yellow-rumped Warbler (1) Tennessee Warbler (1) Black-throated Green Warbler (1) Ruby-crowned Kinglet (1)	Dark-eyed Junco (1)	None
June 23, 2015	623905	5885948	Black Spruce	0556	Swainson's Thrush (1) Ruby-crowned Kinglet (1) Canada Goose (1) Palm Warbler (1) Dark-eyed Junco (2)	None	None
June 23, 2015	623720	5886200	Black Spruce	0617	Swainson's Thrush (1) Tennessee Warbler (1) Ruby-crowned Kinglet (1) Yellow-rumped Warbler (1)	None	None
June 23, 2015	623937	5886411	Black Spruce	0636	Yellow-rumped Warbler (1) Black-backed Woodpecker (1)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Eastings		Start Time	Species (Number)		
June 23, 2015	624171	5886615	Black Spruce	0654	Common Raven (1) Swainson's Thrush (1) Yellow-rumped Warbler (1)	None	None
June 23, 2015	624355	5886858	Black Spruce	0717	Swainson's Thrush (1) Tennessee Warbler (3) Hermit Thrush (1) Fox Sparrow (1) White-throated Sparrow (1) Magnolia Warbler (1)	None	None
June 23, 2015	624490	5887124	Mixedwood	0746	Swainson's Thrush (4) Tennessee Warbler (1) Ruby-crowned Kinglet (1) Yellow-rumped Warbler (1) Dark-eyed Junco (3) Fox Sparrow (1) American Three-toed Woodpecker (1) Northern Waterthrush (1)	None	None
June 23, 2015	624779	5887085	Mixedwood	0822	Swainson's Thrush (1) Tennessee Warbler (1) Ruby-crowned Kinglet (1) Yellow-rumped Warbler (1) Dark-eyed Junco (1)	White-throated Sparrow (1)	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 23, 2015	624626	5886820	Mixedwood	0911	Common Raven (1) Swainson's Thrush (5) Tennessee Warbler (1) Black-throated Green Warbler (1)	None	None
June 24, 2015	607941	5870651	Black Spruce	0609	Ruby-crowned Kinglet (1) Swainson's Thrush (2) Cape May Warbler (1)	Tennessee Warbler (2) Yellow-rumped Warbler (1)	Magnolia Warbler (1) White-throated Sparrow (1)
June 24, 2015	607710	5870442	Black Spruce	0634	Ruby-crowned Kinglet (1) Swainson's Thrush (1) Gray Jay (1) Tennessee Warbler (1) Dark-eyed Junco (1)	Yellow-rumped Warbler (1) Magnolia Warbler (1) Hairy Woodpecker (1)	None
June 24, 2015	607394	5870476	Black Spruce	0700	Ruby-crowned Kinglet (1) Swainson's Thrush (2) Tennessee Warbler (1) Dark-eyed Junco (1) Yellow-rumped Warbler (1) Hermit Thrush (1)	None	Ruffed Grouse (1)
June 24, 2015	607266	5870193	Black Spruce	0725	Ruby-crowned Kinglet (1) Swainson's Thrush (2) Dark-eyed Junco (1) Yellow-bellied Flycatcher (1)	None	Boreal Chickadee (1)



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 24, 2015	607247	5869882	Balsam Fir	0757	Swainson's Thrush (2) Yellow-bellied Flycatcher (1) Black-throated Green Warbler (2) Winter Wren (1) American Redstart (1)	None	Northern Waterthrush (1) Magnolia Warbler (1)
June 24, 2015	606962	5869774	Disturbed (windthrow)	0837	Swainson's Thrush (3) Red-breasted Nuthatch (1) Northern Waterthrush (1) Magnolia Warbler (1) White-throated Sparrow (1)	None	None
June 24, 2015	606877	5870058	Black Spruce	0912	Ruby-crowned Kinglet (1) Swainson's Thrush (2)	None	None
June 24, 2015	606645	5870248	Black Spruce	0930	Dark-eyed Junco (1) Magnolia Warbler (1) Savannah Sparrow (1)	Yellow-rumped Warbler (1)	None
June 24, 2015	610925	5871052	Black Spruce	0549	Dark-eyed Junco (1) Swainson's Thrush (5) Fox Sparrow (1)	None	None
June 24, 2015	611133	5871280	Black Spruce	0613	Dark-eyed Junco (1) Swainson's Thrush (2) Fox Sparrow (1) Black-throated Green Warbler (2)	None	None
June 24, 2015	611379	5871460	Black Spruce	0637	Dark-eyed Junco (3)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 24, 2015	611528	5871717	Black Spruce	0659	Dark-eyed Junco (1) Swainson's Thrush (2) White-throated Sparrow (3) Blackpoll Warbler (1) Ruby-crowned Kinglet (1) Orange-crowned Warbler (1)	None	None
June 24, 2015	611805	5871851	Black Spruce	0720	Dark-eyed Junco (1) Swainson's Thrush (2) White-throated Sparrow (1) Ruby-crowned Kinglet (1) Yellow-rumped Warbler (1) Magnolia Warbler (1)	None	None
June 24, 2015	611987	5872091	Black Spruce	0736	Dark-eyed Junco (1) Swainson's Thrush (2) White-throated Sparrow (1) Ruby-crowned Kinglet (1) Yellow-rumped Warbler (1)	None	None
June 24, 2015	612242	5872252	Balsam Fir	0756	Dark-eyed Junco (1) Yellow-rumped Warbler (1)	None	Common Loon (1)
June 24, 2015	611950	5872387	Black Spruce	0830	Yellow-rumped Warbler (1) Red-breasted Nuthatch (1) Tennessee Warbler (1)	None	None
June 24, 2015	611756	5872625	Black Spruce	0900	Swainson's Thrush (1)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Eastings		Start Time	Species (Number)		
June 24, 2015	611449	5872620	Black Spruce	0919	Dark-eyed Junco (1) Ruby-crowned Kinglet (1) Yellow-rumped Warbler (1)	None	None
June 25, 2015	670779	5920036	Black Spruce Lichen Woodland	0449	Common Raven (1) Swainson's Thrush (1) Tennessee Warbler (1) Fox Sparrow (1) White-crowned Sparrow (1) Dark-eyed Junco (2)	None	None
June 25, 2015	670800	5919726	Black Spruce Lichen Woodland	0510	Common Raven (2) Swainson's Thrush (1) Tennessee Warbler (3) Fox Sparrow (1) Dark-eyed Junco (2) White-throated Sparrow (1) Yellow-rumped Warbler (1)	Gray Jay (1)	Alder Flycatcher (1)
June 25, 2015	670482	5919962	Black Spruce Lichen Woodland	0535	Common Raven (1) Tennessee Warbler (1) Fox Sparrow (1) Dark-eyed Junco (2) Yellow-rumped Warbler (2) Hermit Thrush (2)	Ruby-crowned Kinglet (1)	Orange-crowned Warbler (1)



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 25, 2015	670198	5919850	Disturbed (sandy area)	0550	Swainson's Thrush (3) Tennessee Warbler (2) Fox Sparrow (1) Alder Flycatcher (2) Gray Jay (1) Orange-crowned Warbler (1) Lincoln's Sparrow (1) White-winged Crossbill (1)	None	None
June 25, 2015	670259	5919550	Black Spruce	0610	Tennessee Warbler (1) Fox Sparrow (1) White-throated Sparrow (1) Yellow-rumped Warbler (2) Ruby-crowned Kinglet (1) Alder Flycatcher (2) Orange-crowned Warbler (1) Lincoln's Sparrow (1) American Robin (1)	None	None
June 25, 2015	670601	5919590	Black Spruce	0634	Gray Jay (1)	None	None
June 25, 2015	670585	5919227	Black Spruce	0730	Tennessee Warbler (2) Gray Jay (1) Orange-crowned Warbler (1) American Robin (1)	Fox Sparrow (1)	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 25, 2015	670280	5919245	Black Spruce Lichen Woodland	0747	Tennessee Warbler (1) Orange-crowned Warbler (1) American Robin (1) Northern Waterthrush (1)	Common Raven (1) Boreal Chickadee (1)	None
June 25, 2015	669810	5919742	Black Spruce	0805	Swainson's Thrush (3) Tennessee Warbler (2) Fox Sparrow (1) White-throated Sparrow (1) Yellow-rumped Warbler (2) Gray Jay (1) Yellow-bellied Flycatcher (1)	Hermit Thrush (1)	None
June 25, 2015	669398	5919825	Black Spruce	0820	Swainson's Thrush (1) Tennessee Warbler (2) Fox Sparrow (2) White-throated Sparrow (1) Ruby-crowned Kinglet (1) Orange-crowned Warbler (2) Northern Waterthrush (1) Black-throated Green Warbler (1)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 25, 2015	671683	5919967	Black Spruce	0441	American Crow (2) Swainson's Thrush (2) Tennessee Warbler (1) Yellow-rumped Warbler (2) Fox Sparrow (1) White-throated Sparrow (2) Dark-eyed Junco (2)	None	None
June 25, 2015	672021	5919973	Mixedwood	0457	Swainson's Thrush (2) Tennessee Warbler (3) Fox Sparrow (1) White-throated Sparrow (1) Ruby-crowned Kinglet (1) Orange-crowned Warbler (1)	None	None
June 25, 2015	672414	5919981	Black Spruce	0510	Tennessee Warbler (1) Yellow-rumped Warbler (1) Fox Sparrow (1) Ruby-crowned Kinglet (2) Orange-crowned Warbler (2) Gray Jay (2)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 25, 2015	672790	5919993	Black Spruce	0523	Swainson's Thrush (1) Tennessee Warbler (1) Yellow-rumped Warbler (1) Fox Sparrow (1) White-throated Sparrow (1) Dark-eyed Junco (1) Orange-crowned Warbler (2) Gray Jay (1)	None	None
June 25, 2015	673120	5919882	Black Spruce	0535	Yellow-rumped Warbler (1) Dark-eyed Junco (2) Ruby-crowned Kinglet (1) Orange-crowned Warbler (1) White-crowned Sparrow (1) Bank Swallow (3) Yellow-bellied Flycatcher (1)	None	None
June 25, 2015	673383	5919689	Bog	0550	Tennessee Warbler (1) Yellow-rumped Warbler (1) White-throated Sparrow (1) Dark-eyed Junco (2) Gray Jay (3) Pine Grosbeak (1)	None	None
June 25, 2015	673681	5919470	Black Spruce	0607	Tennessee Warbler (1) Dark-eyed Junco (2) Orange-crowned Warbler (1) Bank Swallow (2) Pine Grosbeak (1)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 25, 2015	673983	5919259	Black Spruce	0620	Swainson's Thrush (1) Tennessee Warbler (2) Dark-eyed Junco (1)	None	None
June 25, 2015	674283	5919055	Black Spruce	0635	Tennessee Warbler (2) Ruby-crowned Kinglet (1) Orange-crowned Warbler (1)	None	None
June 25, 2015	674665	5918933	Black Spruce	0654	Tennessee Warbler (2) Yellow-rumped Warbler (1) Dark-eyed Junco (1) Gray Jay (1) American Three-toed Woodpecker (1) White-winged Crossbill (6)	None	None
June 25, 2015	674367	5918756	Black Spruce	0713	Tennessee Warbler (1) White-throated Sparrow (1) Ruby-crowned Kinglet (1) Gray Jay (1)	None	None
June 25, 2015	675062	5918660	Black Spruce	0735	Tennessee Warbler (2)	None	None
June 25, 2015	675382	5918502	Black Spruce	0753	Swainson's Thrush (1) Tennessee Warbler (1) Yellow-rumped Warbler (1) Fox Sparrow (1) Dark-eyed Junco (1)	None	None



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Date	Coordinate (20 U)		Habitat	5-minute Listening Period		Species following call playback (Number) [1- minute listening period]	Incidental Observations (Number)
	Northing	Easting		Start Time	Species (Number)		
June 25, 2015	675795	5918300	Regenerating Forest	0807	American Crow (2) Tennessee Warbler (1) White-throated Sparrow (1) Dark-eyed Junco (1) Ruby-crowned Kinglet (1)	None	None
June 25, 2015	674217	5918488	Black Spruce	0833	Tennessee Warbler (2) Yellow-rumped Warbler (1) White-throated Sparrow (1) Ruby-crowned Kinglet (2) Orange-crowned Warbler (1) American Three-toed Woodpecker (1)	None	None



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# **APPENDIX C**

## Common Nighthawk Survey Data



NALCOR ENERGY LOWER CHURCHILL PROJECT, ENVIRONMENTAL EFFECTS MONITORING PROGRAM – AVIFAUNA

Table C.1 Common Nighthawk Point Count Survey Data

Date	UTM Coordinate (20 U)		Start Time	Common Nighthawk	Incidental Observation	Start Time		Common Nighthawk	Incidental Observation	Habitat
	Northing	Easting	6-minute Listening Period			2-minute Call Playback	2-Minute Listening Period			
June 7, 2015	676794	5909399	2100	0	White-throated Sparrow American Robin	2108	2110	1	None	Happy Valley-Goose Bay - Sandy open area
June 7, 2015	641698	5902272	2142	0	Fox Sparrow Swainson's Thrush White-throated Sparrow Snowshoe Hare Red Squirrel American Toad Ruby-crowned Kinglet	2148	2150	0	Wilson's Snipe	Lower Brook – Sandy open area bordered by mixedwood
June 7, 2015	648349	5902837	2145	0	American Toad White-crowned Sparrow	2153	2155	0	Alder Flycatcher	Muskrat Falls/North Spur - Recently cleared area



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Date	UTM Coordinate (20 U)		Start Time 6-minute Listening Period	Common Nighthawk	Incidental Observation	Start Time		Common Nighthawk	Incidental Observation	Habitat
	Northing	Easting				2-minute Call Playback	2-Minute Listening Period			
June 7, 2015	640880	5903155	2200	0	Swainson's Thrush White-throated Sparrow Wilson's Snipe	2207	2209	0	None	Lower Brook – Open sandy area bordered by black spruce and trembling aspen
June 7, 2015	648867	5904470	2204	0	American Toad Spring Peeper	2212	2214	0	None	Muskrat Falls – Open sandy area bordered by black spruce
June 7, 2015	640678	5903721	2218	0	Swainson's Thrush White-throated Sparrow Red-breasted Nuthatch	2224	2226	0	None	Lower Brook – Open sandy pit bordered by black spruce and trembling aspen
June 7, 2015	646391	5905939	2221	0	American Toad Alder Flycatcher	2229	2231	0	White-throated Sparrow	Lower Brook – Open sandy pit bordered by black spruce



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Date	UTM Coordinate (20 U)		Start Time 6-minute Listening Period	Common Nighthawk	Incidental Observation	Start Time		Common Nighthawk	Incidental Observation	Habitat
	Northing	Easting				2-minute Call Playback	2-Minute Listening Period			
June 7, 2015	640790	5904418	2235	0	Red-breasted Nuthatch	2241	2243	0	None	Lower Brook – Open sandy pit bordered by black spruce and trembling aspen
June 15, 2015	611005	5871409	2022	0	Fox Sparrow White-throated Sparrow	2030	2032	0	Dark-eyed Junco	Gull Island – Open sandy area bordered by mixedwood
June 15, 2015	672290	5878487	2029	0	Hermit Thrush Ruby-crowned Kinglet Pine Grosbeak Red Squirrel	2036	2036	0	None	South TLH – Bog with black spruce and larch
June 15, 2015	610481	5871809	2038	0	Dark-eyed Junco Hermit Thrush	2046	2048	0	Swainson's Thrush	Gull Island – Open sandy area bordered by black spruce
June 15, 2015	609481	5872499	2052	0	Swainson's Thrush White-throated Sparrow	2100	2102	0	Dark-eyed Junco Ruby-crowned Kinglet	Gull Island – Open sandy area bordered by black spruce



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Date	UTM Coordinate (20 U)		Start Time 6-minute Listening Period	Common Nighthawk	Incidental Observation	Start Time		Common Nighthawk	Incidental Observation	Habitat
	Northing	Easting				2-minute Call Playback	2-Minute Listening Period			
June 15, 2015	669048	5879923	2058	0	Unidentified Waterfowl American Crow Common Merganser White-throated Sparrow Ruby-crowned Kinglet	2105	2107	0	Herring Gull	South TLH/Traverspine River – Riparian
June 15, 2015	609841	5873387	2106	0	Northern Waterthrush Dark-eyed Junco	2114	2116	0	White-throated Sparrow	Gull Island - Open black spruce near bog
June 15, 2015	668303	5880058	2118	0	White-throated Sparrow Ruby-crowned Kinglet Spring Peeper	2125	2127	1	Hermit Thrush	South TLH – Bog with black spruce and larch
June 15, 2015	611890	5875903	2127	0	Swainson's Thrush Dark-eyed Junco	2135	2137	0	White-crowned Sparrow Moose	Gull Island – Open black spruce with bogs



NALCOR ENERGY LOWER CHURCHILL PROJECT, ENVIRONMENTAL EFFECTS MONITORING PROGRAM – AVIFAUNA

Date	UTM Coordinate (20 U)		Start Time	Common Nighthawk	Incidental Observation	Start Time		Common Nighthawk	Incidental Observation	Habitat
	Northing	Easting	6-minute Listening Period			2-minute Call Playback	2-Minute Listening Period			
June 15, 2015	667905	5880427	2138	0	Hermit Thrush	2145	2147	0	None	South TLH – Bog with black spruce and larch
June 15, 2015	613862	5877047	2144	0	Northern Waterthrush	2152	2154	0	None	Pinus River - Recently mulched bordered by black spruce
June 15, 2015	667597	5880960	2158	0	Spring Peeper Hermit Thrush Dark-eyed Junco Canada Goose	2205	2207	0	None	South TLH/Traverspine River – Riparian
June 15, 2015	666927	5885302	2225	0	American Toad Greater Yellowlegs	2232	2234	0	None	South TLH – Bog with black spruce and larch
June 20, 2015	640568	5901336	2036	0	Swainson's Thrush Ruby-crowned Kinglet White-crowned Sparrow	2042	2044	0	None	Lower Brook – Open gravel area bordered by black spruce and trembling aspen



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Date	UTM Coordinate (20 U)		Start Time	Common Nighthawk	Incidental Observation	Start Time		Common Nighthawk	Incidental Observation	Habitat
	Northing	Easting	6-minute Listening Period			2-minute Call Playback	2-Minute Listening Period			
June 20, 2015	640959	5901479	2053	0	Dark-eyed Junco Swainson's Thrush Red-eyed Vireo Tennessee Warbler Black-throated Green Warbler Spring Peeper	2059	2101	0	American Robin	Lower Brook - Open sandy area bordered by black spruce and trembling aspen
June 20, 2015	641529	5902655	2109	0	Swainson's Thrush Dark-eyed Junco Woodpecker Spp. Black-throated Green Warbler	2115	2117	0	White-throated Sparrow	Lower Brook - Open sandy area bordered by black spruce
June 20, 2015	644612	5904535	2128	0	Swainson's Thrush White-crowned Sparrow	2135	2137	0	Ruby-crowned Kinglet	Lower Brook - Open gravel area bordered by black spruce



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Date	UTM Coordinate (20 U)		Start Time	Common Nighthawk	Incidental Observation	Start Time		Common Nighthawk	Incidental Observation	Habitat
	Northing	Easting	6-minute Listening Period			2-minute Call Playback	2-Minute Listening Period			
June 20, 2015	666987	5905209	2201	0	Swainson's Thrush American Robin White-throated Sparrow American Toad	2207	2210	0	Spotted Sandpiper	Churchill River Causeway – Riparian
June 21, 2015	630186	5891052	2017	0	American Toad Wood Frog Hermit Thrush Wilson's Snipe	2025	2027	0	Alder Flycatcher	Edward's Brook – Mixedwood adjacent to bog
June 21, 2015	629849	5890641	2038	0	American Toad Spring Peeper Alder Flycatcher Little Brown Myotis	2044	2046	0	None	Edward's Brook – Mixedwood adjacent to bog



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Date	UTM Coordinate (20 U)		Start Time	Common Nighthawk	Incidental Observation	Start Time		Common Nighthawk	Incidental Observation	Habitat
	Northing	Easting	6-minute Listening Period			2-minute Call Playback	2-Minute Listening Period			
June 21, 2015	636267	5898457	2059	0	Swainson's Thrush Ruby-crowned Kinglet Dark-eyed Junco American Toad	2107	2109	0	None	Upper Brook – Open area bordered by black spruce and trembling aspen
June 21, 2015	628057	5889109	2105	0	Swainson's Thrush Dark-eyed Junco Hermit Thrush White-throated Sparrow Woodpecker Spp. Ruby-crowned Kinglet	2111	2113	0	White-crowned Sparrow	Edward's Brook – black spruce near bog
June 21, 2015	625349	5887275	2120	0	Swainson's Thrush Gray Jay White-throated Sparrow	2127	2129	0	Spring Peeper	Edward's Brook – black spruce adjacent to waterbody



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Date	UTM Coordinate (20 U)		Start Time 6-minute Listening Period	Common Nighthawk	Incidental Observation	Start Time		Common Nighthawk	Incidental Observation	Habitat
	Northing	Easting				2-minute Call Playback	2-Minute Listening Period			
June 21, 2015	636131	5897564	2124	1*	None	-	-	-	-	Upper Brook – Open gravel area bordered by mixedwood
June 21, 2015	634528	5895873	2133	0	Wood Frog Spring Peepers Swainson's Thrush White-throated Sparrow Ruby-crowned Kinglet	2141	2143	0	None	Edward's Brook – Open gravel area bordered by mixedwood
June 21, 2015	623367	5883480	2140	0	Swainson's Thrush Great Horned Owl White-throated Sparrow Moose	2146	2148	0	Dark-eyed Junco Gray Jay	Edward's Brook- Black Spruce adjacent to waterbody



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Date	UTM Coordinate (20 U)		Start Time	Common Nighthawk	Incidental Observation	Start Time		Common Nighthawk	Incidental Observation	Habitat
	Northing	Easting	6-minute Listening Period			2-minute Call Playback	2-Minute Listening Period			
June 21, 2015	636614	5893425	2154	0	White-throated Sparrow Swainson's Thrush American Toad	2202	2204	0	None	Edward's Brook – Open gravel area bordered by black spruce and trembling aspen
June 21, 2015	622495	5882913	2155	0	American Toad Swainson's Thrush White-throated Sparrow Northern Waterthrush	2201	2203	0	None	Edward's Brook- Gravel area and waterbody in black spruce forest
June 21, 2015	617520	5879736	2215	0	Swainson's Thrush	2222	2224	0	Spring Peeper	Pinus River – Recent burn
June 21, 2015	615068	5878752	2231	0	Swainson's Thrush Spring Peeper	2237	2239	0	American Toad	Pinus River - Recent burn

\* Common Nighthawk observed flying over as arrived at site, survey was not continued.

